

REMARKS

Claims 34-66 are pending in this application. Claims 1-33 have been cancelled.

Claims 34-66 are new claims.

In the Office Action mailed March 10, 2006, (hereinafter "Office Action") the examiner has rejected Claims 3 and 5 under 35 U.S.C. § 112, second paragraph, as being indefinite for the meaning of R and also has rejected Claims 3 and 5 for not providing the definition of R'. Applicant has cancelled Claims 3 and 5 and has represented the corrected subject matter of Claims 3 and/or 5 in new claims 35, 37 and 52. Support for this corrected recitation of the meaning of R and the definition of R' can be found at page 8, line 2 of the specification. No new matter has been presented herein. In view of the cancellation of Claims 3 and 5 and the presentation of the corrected subject matter as stated, it is believed that this rejection has been obviated.

The Examiner has rejected Claims 1, 3-5, 7-13 and 28-33 under 35 U.S.C. § 102(b) as anticipated by Roodvoets U.S. Patent No. 3,939,133 (hereinafter "Roodvoets"). As stated in the previous response, the Examiner has not appreciated the difference in polymer chemistries between that disclosed in Roodvoets and the current invention.

Firstly, Roodvoets discloses curing of high vinyl rubbers such as polymers of butadiene, while the currently claimed invention claims a thermoplastic polyolefin. It is believed that polymers of butadiene (i.e., polybutadiene), as disclosed by Roodvoets, does not disclose a thermoplastic polyolefin.

Secondly, Roodvoets disclosure of vinyl triacetoxysilane is (presumptively because no purpose is stated) only being used as a coupling agent to directly couple the polybutadiene to the filler to increase physical strength properties in the rubber. In contrast, the currently claimed invention is a process for producing a silane-crosslinked thermoplastic polymer wherein the

silane is the cross-linking agent between the chains of thermoplastic polyolefin.

Thirdly, nowhere in Roodvoets is it believed that there is any disclosure of a metal catalyst conventionally used in the hydrolysis/condensation reactions involved in the production of a silane-crosslinked thermoplastic polymer, such as was claimed in now cancelled claims 28-33.

Fourthly, the Examiner has stated that the presence of moisture appears to be inherent because of applicants prior statement of a vacuum-drying step in Roodvoets. Examiner has made the statement that "if no moisture were present during the process, then no vacuum-drying would be necessary." On the contrary, Roodvoets discloses in column 2, lines 61-63 that solvents may be used. It is posited to the examiner that the vacuum-drying step in Roodvoets may have been used to remove solvent, if present. It is a well established point of law that "Inherent anticipation requires that the missing descriptive material is 'necessarily present', not merely probably or possibly present, in the prior art" *Trintec Industries Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 1295, 63 USPQ2d 1597, 1599 (Fed. Cir. 2002) quoting *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1946, 1950-51 (Fed. Cir. 1999), underlining added for emphasis. The presence of moisture is not necessarily present in Roodvoets and any statement to that effect is believed to be unsupported by the disclosure of Roodvoets.

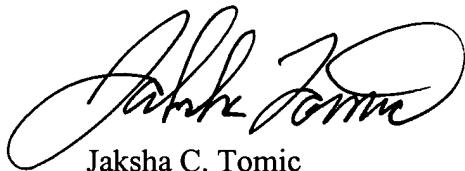
In any event it is submitted that applicants' do not necessarily agree with the statements made by the examiner in the previous office action but, in an effort to advance the prosecution of the application, applicants' have cancelled claims 1-33 as indicated above, which obviates this rejection. Applicants' reserve the right to file divisional and/or continuation applications to any of the withdrawn claims and to any subject matter supported by the specification.

Applicants have represented the combined subject matter of original claims 1 and 2 in new claim 34. In addition, applicants have presented new claims 35-51 which depend ultimately

from claim 34. Still further, applicants have represented the combined subject matter of original claims 1, 3 and 6 in new claim 52. In addition, applicants have presented new claims 53-66 which depend ultimately from claim 52. In an interview with examiner and the undersigned attorney of record on April 27, 2006, examiner stated that pursuant to paragraph 5 of the most recent office action, original claims 1 and 2, (and thus it is presumed by applicants', also claims 1, 3 and 6), if rewritten to include all of the limitations of the base claim and any intervening claim would appear to be allowable. Examiner further stated that original claims 3-13 would appear to also be allowable if rewritten to depend from the combined new claim of original claim 1 and 2 (and thus it is presumed by applicants', also combined original claims 1, 3 and 6). Applicants have presented new claims 34-66 along this line of reasoning as indicated by the examiner. It is respectfully submitted that claims 34-66 are allowable over the prior art of record and the allowance of claims 34-66 is now respectfully requested.

An early favorable examination on the merits of the subject matter of Claims 34-66 is respectfully requested. Please charge any required fee to Deposit Account No. 07-0888. Also in the event that any extensions of time are required please treat this paper as a petition to extend the time as required and charge Deposit Account No. 07-0888.

Respectfully submitted,



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between 30° to 90 °C greater than the 0.1 hour half-life temperature of the first free radical initiator. Most preferably the second 0.1 hour half-life temperature of the second free radical initiator is between 45° and 70 °C greater than the 0.1 hour half-life temperature of the first free radical initiator.

5 The first free radical initiator is preferably a peroxide and possesses a relatively low 0.1 hour half-life temperature, e.g. of from about 80°C to about 160°C and preferably from about 90°C to about 155°C as measured in a dilute solution of the initiators in monochlorobenzene. Suitable first free radical initiators and their range of 0.1 hour half-life temperatures are set forth in Table I as follows.

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Table I: First Free Radical Initiator

First Free Radical Initiator	Range of 0.1 hour half-life Temperatures [°C]
Di(2,4-dichloro benzoyl) peroxide	93
Dilauroyl peroxide	99
Dibenzoyl peroxide	113
1,1-Di(tert-butylperoxy)-3,3,5-trimethylcyclohexane	128
Tert-Butyl peroxybenzoate	142
Dicumyl peroxide	154

In addition, other first free radical initiators can include tert-butyl peroxy pivalate, tert-butyl peroxy-2-ethylhexanoate, di(tert-butylperoxy)cyclohexane, tert-butyl peroxy-3,5,5-trimethylhexanoate, tert-butyl peroxyacetate, di-tert-amyl peroxide, di(tert-butylperoxyisopropyl)benzene and 2,5-dimethyl-2,5-di(tert-butylperoxy)hexane, as well as any free radical initiator that is conventionally used or known.

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The second free radical initiator, also preferably a peroxide, possesses a higher 0.1 hour half-life temperature than that of the first free radical initiator, e.g., on the order of from about 125° to about 190°C and preferably from about 140° to about 170°C.

Suitable second free radical initiators and their range of 0.1 hour half-life temperatures are set forth in Table II as follows.

Table II: Second Free Radical Initiators

Second Free Radical Initiator	Range of 0.1 hour half-life Temperatures
Tert-Butyl peroxybenzoate	142
Dicumyl peroxide	154
Tert-butyl cumyl peroxide	159
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexyne-3	164

5 Additional second free radical initiators can include tert-butyl peroxyacetate, di-tert-amyl peroxide, di(tert-butylperoxyisopropyl)benzene, 2,5-dimethyl-2,5-di(tert-butylperoxy)hexane and di-tert-butyl peroxide, as well as any free radical initiator that is conventionally used or known.

The crosslinking process can further include the use of a condensation catalyst. A 10 wide variety of materials which function as condensation catalysts for silanes are known in the art and any of such materials may be employed in the process of this invention. Such materials include for example metal carboxylates such as dibutyltin dilaurate, stannous acetate, stannous octoate, lead naphthenate, zinc octoate, iron-2-ethylhexoate and cobalt naphthenate, organic metal compounds such as the titanium esters and 15 chelates, for example tetrabutyl titanate, tetrabutyl titanate and bis(acetylacetonyl) diisopropyl titanate, organic bases such as ethylamine, hexylamine, dibutylamine and piperidine and acids such as the mineral acids and fatty acids. The preferred catalysts are the organic tin compounds, for example, dibutyltin dilaurate, dibutyltin diacetate, and dibutyltin dioctoate.